REMARKS

Claims 11-21 are pending in the application. Previously allowable claims 14 and 19 were rejected based on the newly discovered Shimomura, et al. reference. The claims in the application were rejected as follows:

Claims / Section	35 U.S.C. Sec.	References / Notes
11, 15, 16, 18 & 21	§102(b) Anticipation	• Hirakawa, et al. (U.S. Patent No. 4,590,508).
11 & 13-21	§102(e) Anticipation	• Shimomura, et al. (U.S. Patent No. 5,736,421).
12	§103(a) Obviousness	• Shimomura, et al. (U.S. Patent No. 5,736,421); and • Uehara, et al. (U.S. Patent No. 5,598,902).
1-6 & 9	§103(a) Obviousness	• Peter, et al. (U.S. Patent No. 6,418,389); and • Tverdy, et al. (U.S. Patent No. 6,356,094).

Applicants hve amended claim 11, added claims 22-24, and provided discussion for distinguishing the present invention, with claims as amended, from the art cited against it.

35 U.S.C. §102(b), CLAIMS 11, 15, 16, 18 AND 21 ANTICIPATION BY HIRAKAWA

1. Hirakawa fails to disclose the use of filler structures that perform no circuit-oriented functions, as claimed by amended claim 11 Furthermore, Hirakawa fails to disclose (claim 18) useful structures and conductive filler structure formed on a plane.

Applicants have amended claim 11 to include two additional features: a) the conductive useful structures and the conductive filler structure exhibit essentially the same height, and b) the conductive filler structure has no circuit-

oriented function. Support for these amendments can be found in the specification as follows: feature (a) is disclosed on page 3, lines 28 to 29, and feature (b) is disclosed on page 6, lines 10 to 11 of the Specification. By these features, Applicants claim that the conductive filler structure is a dummy structure and that it has been formed by the same process steps as the conductive useful structures; as both kinds of structures result from depositing an patterning one and the same conductive layer, these structures have essentially the same height.

Newly added claims 22-24 are also supported by the Specification. Dependent claim 22 is disclosed on page 6, lines 11 to 13. Claim 23 claims those features included in amended claim 11 and therefore is disclosed by corresponding passages of the specification. Claim 24 corresponds to claim 22 and depends on independent method claim 18. Applicants note that MPEP §2173,05(i) permits the use of negative limitations, provided they have a basis in the original disclosure (as they do here).

According to the invention, as amended, useful structures as well as dummy (filler) structures are provided which exhibit the same height (or, with regard to the method claim, are formed from the same conductive layer). Furthermore, according to the present invention, as amended, the dummy filler structure has no circuit-oriented function.

Hirakawa does not disclose such an integrated circuit arrangement. Figure 4 illustrates two structures which might be regarded as filler structures. The first filler structure 104-2 is provided on the left side on an oxide layer portion having

increased oxide thickness compared to gate oxide under gate electrode 104-1. This filler structure 104-2, however, is part of a wordline as disclosed in column 4, line 62 and accordingly performs an electrical circuit-oriented function. Furthermore, this structure cannot be regarded as a filler structure because this elevated structure does not fill recesses on the thinner gate oxide in the center portion of Figure 4.

The other conductive filler structure on the right side of Figure 4 (without reference number) also has an electrical circuit-oriented function because it contacts the right source/drain implantation region of the transistor being formed with gate electrode 104-1. The contact structure for the left source/drain-implantation region is not illustrated; it seems to be provided above or below the drawing plane illustrating the cross-section of Figure 4. However, because of its electrical circuit-oriented function, the right conductive structure without reference number is an electrode contact structure rather than a dummy filler structure.

Furthermore, even if, for the sake of argument, it were to be construed as a filler structure, it would be deposited on a gate oxide layer. Figure 4 however illustrates that the gate oxide layer extends below gate electrode 104-1 but above the structure having no reference number; accordingly the right "dummy filler structure" has not been formed from the same patterned layer as the useful (gate) structure.

Applicants do not believe that present claim 18 needs to be amended because it includes the feature (in the second method step) that the conductive useful structures and the conductive filler structure are both formed by applying

and structuring a conductive layer which means applying and structuring one and the same conductive layer. This implicitly includes the feature that these kinds of structures have the same height.

Hirakawa fails to disclose that both the useful structure 104-1 and the "dummy filler structure" on the right side of Figure 4 (without reference number) are formed by applying and patterning one and the same conductive layer.

35 U.S.C. §102(e), CLAIMS 11 AND 13-21 ANTICIPATION BY SHIMOMURA

2. Shimomura fails to disclose the elements of amended independent claim 11 and independent claim 18 that the filler structure and useful structures have essentially the same height or are formed by applying and patterning the same conductive layer.

According to amended claim 11, and existing claim 18 (as noted previously) Shimomura fails to disclose that structure 112 in Figure 1 regarded as filler structure in the Office Action and the conductive useful structure 113 have essentially the same height (they are not made of the same number of layers). Furthermore, the structure 112 is a resistor and accordingly has a circuit-oriented function, in contrast with claim 11, as amended. As to method claim 18, Shimomura fails to disclose that both structures 112 and 113 are formed by applying and patterning one and the same conductive layer.

For these reasons, the Applicants assert that the amended independent claim 11 language clearly distinguishes over the prior art, and that the above argumentation clearly distinguishes independent claim 18 over the prior art.

Applicants respectfully request that the Examiner withdraw the §102 rejection from the present application.

35 U.S.C. §103(a), CLAIM 12 OBVIOUSNESS OVER SHIMOMURA IN VIEW OF UEHARA

3. Applicants have amended claim 11, from which claim 12 depends, to include the limitation that the conductive filler structure has no circuit oriented function. Shimomura cannot be combined with Uehara because the role of Shimomura's structure 112 is different from Uehara's 50b, and these cannot both be construed as "conductive filler structures".

Applicant has amended claim 11 (and thus, claim 12 by virtue of its dependence from claim 11) to include the limitation that the conductive filler structure has no circuit-oriented function.

According to Shimomura, Figure 1 illustrates a resistor 112 comprising two stacked layers. First, considering the term "conductive", the essential property of the resistor is its limited ability to allow the transport of electrical charges. It is just the resistivity (that is the opposite of conductivity) which is exploited when a resistor, rather than a conductive metal line, is used in an integrated circuit. Thus, Shimomura does not disclose the "conductive" structures, according to the present invention.

Second, the Shimomura structure 112 cannot be construed as a "filler" structure because this expression implies that something like a void, a trench, or a recess is filled by a "filler" structure. Figure 1 of Shimomura discloses no recess to be filled with pattern 112. Instead, pattern 112 is extending on and protruding above an elevated upper surface of oxide 105. Accordingly, over

structure 112 cannot be construed as a "filler" structure. Thus, Shimomura does not disclose the elements of claim 11.

Additionally, the amendments to claim 11 further distinguish over Shimomura. According to amended claim 11, the conductive filler structure has no circuit-oriented function which means that, in particular, it has no electrical function. However, the resistor according to the structure 112 in Figure 1 of Shimomura is used precisely because of its electrical resisitivity. A structure without any circuit-oriented function is not illustrated in Figure 1 of Shimomura.

As the structure 112 is neither a conductive structure nor a filler structure, and as the structure 112 has an electrical function (and thus is not a dummy structure), Applicants respectfully contend that this structural difference does not permit the combining of Shimomura and Uehara (which refers to dummy gate electrodes).

The Examiner indicates in the OA on p. 7 that a person skilled in the art would have been motivated to design the conductive useful structures and the resistor 112 to exhibit essentially the same height. Applicants respectfully assert that there is no motivation to combine these references because the advantages of making uniform finished sizes of the gate electrode (see col. 7 of Uehara) cannot be applied to a resistor structure 112 of Figure 1 of Shimomura. This advantage can only be used when dealing with a gate structure. The advantage of uniform gate sizes addressed in the abstract of Uehara referring to gate electrodes cannot be applied to the shaping of resistors 112 of Figure 1 in Shimomura. The OA refers inconsistently to conductor filler structures in both

Shimomura and Uehara. In the OA, p. 7, lines 1-5, the examiner refers to the "conductive filler structures 112" of Shimomura, then on page 7, beginning at line 6, the Examiner refers to the conductive filler structures 50b of Uehara, and on page 7, penultimate line, to page 8, line 3 the Examiner refers to the "conductive filler structures" of Shimomura again. It is not valid to equate the structures 112 of Shimomura with the structures 50b of Uehara.

For these reasons, the Applicant asserts that the amended claim language clearly distinguishes over the prior art, and respectfully request that the Examiner withdraw the §103(a) rejection from the present application.

CONCLUSION

Inasmuch as each of the objections have been overcome by the amendments, and all of the Examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections be withdrawn and that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

 (Reg. No. 45,877)

Mark Bergner
SCHIFF HARDIN & WAITE
PATENT DEPARTMENT
6600 Sears Tower
Chicago, Illinois 60606-6473
(312) 258-5779
Attorney for Applicants
Customer Number 26574

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Mark Bergner Attorney for Applicants